(11)

USSR

UDC 576.858.6.083.35.07

ZHDANOV, V. M., BYKOVSKIY, A. F., AL'TSHTEYN, A. D., LOZINSKIY, T. F., URYVAYEV, L. V., VOLKOVA, M. L., YERSHOV, F. I., IL'IN, K. V., BEKTEMIROV, T. A., IRLIN, I. S., MILLER, G. G., ZAKHAROVA, L. G., PEREKREST, V. V., GERASINA, S. F., and SEVAST'YANOVA, M. V., Institute of Virology imeni D. I. Ivanovskiy, Academy of Medical Sciences USSR, and the Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Moscow

"Detection of Oncornaviruses in Continuous Tissue Cultures"

Moscow, Voprosy Virusologii, No 4, 1973, pp 411-414

Abstract: Studies were conducted on a number of human and animal continuous tissue cultures maintained in medium 199 containing 10% bovine serum to determine oncornaviruses. Formation of oncornaviruses in the tissue cultures were followed by the appearance of virtal particles in the culture fluid labeled with H^3-uridine, susceptibility of their synthesis to low actinomycin D concentrations, appearance of these particles following inhibition of nuclear material synthesis by bromodeoxyuridine or mitomycin, presence of reverse transcriptase in these particles, presence of 60-70 S RNA in these particles, and electron microscopy. Of the 26 human lines investigated 14 contained type B oncornavirus, and 4 lines type C virus. Eight of the

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USSR

ZHDANOV, V. M., et al., Voprosy Virusologii, No 4, 1973, pp 411-414

14 animal lines studies also showed the presence of oncornaviruses. The source of these viruses in the human lines remains unclear, but the source may have been bovine serum or porcine trypsin used in the preparation of cell suspension. It is noteworthy that type B viruses were isolated in human cultures of epithelial origin, while type C viruses in human cultures of leukotic or sarcomatous origin.

2/2

USSR

UDC 539.3

KOSHODAMIANSKIY, A. S., LOZINSKIY, V. N., Donetsk

"Thermoelastic Problem for a Circular Plate with Regularly Arranged Circular Holes in Which Elastic Rings are Soldered"

Kiev, Prikladnaya Mekhanika, Vol VII, No 4, 1971, pp 58-65

Abstract: A solution is found for the problem of thermoelastic stresses in a thin circular plate with regularly arranged circular holes caused by the effect of a stationary point heat source. Elastic rings are soldered in the holes in the plate, and the temperature field of the plate and the rings is determined. The stress-strain state is found by partial solution of the equation of thermoelastic potential and complex Kolosov-Muskhelishvili potentials. A numerical study is made of the stresses acting along the solder outline and the inside outline of the ring.

Inclusion of soldered rings in the force diagram of the plate leads to a reduction in the level of tangential stresses in the plate around the hole in which the rings are inserted. The wider the ring, the greater the reduction in level of tangential stresses. The stresses in the ring on the inside diameter increase with a decrease in inside radius. The discussed procedure can also

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KOSMODAMIANSKIY, A. S., et al., Prikladnaya Mekhanika, Vol VII, No 4, 1971, pp 58-65

be used to solve the problem of the stress-strain state of a plate with elastic and rigid discs soldered in it.

2/2

UDC: 539.3

USSR

LOZINSKIY, V. N.

"Thermoelastic Stresses Caused by Point Heat Sources in a Circular Plate With Regularly Distributed Circular Holes"

Yervan, Izvestiya Akademii Nauk Armyanskoy SSR -- Mekhanika, vol. 24, No. 1, 1971, pp 51-59

Abstract: The method used in this paper in solving the problem of thermoelastic stresses under the action of a point source of heat is that developed by O. S. Kosmodamianskiy and used in an earlier paper devoted to a similar problem (Bryukhanova, Ye. N., Temperaturnyye napryazheniya v kruglom tsilindre s regulyarno raspolozhennymi kruglymi polostyami -- Temperature Stresses in a Circular Cylinder with Regularly Spaced Circular Holes -- Prikladnaya mekhanika, vol. 5, No. 4, 1969). In the present paper, the author considers a circular plate of given radius, with a given number of holes of unit radius distributed evenly around the plate such that their centers form a circle concentric with the plate. The point source, of known power, is considered to be at this center. To determine the stresses in the plate, the author begins by finding its temperature field through a solution of the equation

$$\nabla^2 T + \frac{W}{\lambda}\delta(z),$$

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1/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--THERMAL STRESSES GENERATED IN AN ELLIPTICAL PLATE WITH A CIRCULAR HOLE BY A POINT HEAT SOURCE -U-

AUTHOR-(02)-KOSMODAMIANSKIY, A.S., LOZINSKIY, V.N.

COUNTRY OF INFO--USSR

SOURCE--PRIKLADNAIA MEKHANIKA, VOL. 6, APR. 1970, P. 74-79

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--THERMAL STRESS, FLAT PLATE, THIN PLATE STRUCTURE, BIBLIOGRAPHY, HOLE IN STRUCTURE, METAL STRESS, CLAMPING DEVICE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1650 STEP NO--UR/0198/70/006/000/0074/0079

CIRC ACCESSION NO--AP0125272

2/2 026 UNCLASSIFIED PROCESSING DATE--27NOV70
CIRC ACCESSION NO--AP0125272
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. APPLICATION OF THE THEORY OF FUNCTIONS OF A COMPLEX VARIABLE TO THE SOLUTION OF THE THERMOELASTIC PROBLEM OF THE ACTION OF A CONCENTRATED HEAT SOURCE ON AN ELLIPTICAL PLATE WITH A CIRCULAR HOLE, RIDIGLY CLAMPED AT THE EDGE OF THE HOLE. THE STRESS FIELD IS SOUGHT AS THE SUM OF TWO FIELDS. ONE FIELD IS DETERMINED WITH THE AID OF A PARTICULAR SOLUTION TO THE THERMOELASTIC POTENTIAL EQUATION, WHILE THE OTHER IS OBTAINED FROM A SOLUTION TO A TWO-DIMENSIONAL PROBLEM WHERE THE DISPLACEMENTS AT THE EDGE OF THE HOLE AND THE STRESSES AT THE EDGE OF THE PLATE ARE KNOWN. FACILITY: AKADEMIIA NAUK UKRAINSKOI SSR, VYCHISLITEL'NYI TSENTR, DONETSK, UKRAINIAN SSR.

USSR

UDC 621.791.753.042.4:669.018.45:539.434

LOZITSKIY, L. P., Doctor of Technical Sciences, BEREZLEV, V. F., Engineer, IVANENKO, A. A., Candidate of Technical Sciences, KOROLEVA, Z. G., Candidate of Technical Sciences, MUSIYENKO, B. I., Engineer, and MOLOCHKOV, M. A., Candidate of Technical Sciences, Kiev Institute of Civil Aviation Engineers

"Thermal Fatigue Resistance of Welded Joints of EP99 Alloy Performed with Electrodes of Different Marks" (Reported at the All-Union Conference "Estimate of the Supporting Power of Materials and Welded Joints According to Breakdown Mechanics," Kiev, Dec 72)

Kiev, Avtomaticheskaya Svarka, No 1(250), Jan 74, pp 39-42

Abstract: An experimental study was made of the effects of heating temperature and thermal cycling on the depth of thermal fatigue cracks and the mechanical properties of welded joints of EP99 alloy welded with NIAT-8 and NIAT-7 electrodes. The parameters characterizing the injuriousness of the specimens in the process of thermal fatigue tests are the depth of cracks, their growing rate, and changes in residual strength, plasticity, and structure. The results are discussed by reference to diagrams showing the depth of crack dependence on maximum cycling temperature and on the quantity of thermal

USSR

LOZITSKIY, I. P., et al., Avtomatcicheskaya Svarka, No 1(250), Jan 74, pp 39-42

cycling and the residual strength and relative narrowing dependences on the maximum temperature after 2000 heat cycles. Specimens welded with NIAT-8 electrodes possessed higher thermal fatigue strength in comparison with specimens welded with NIAT-7 electrodes. The increased Cr content (up to 21%) of the joint welded with the NIAT-7 electrode resulted in decreased thermal fatigue strength of the welded specimen. Four figures, two tables, two bibliographic references.

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USSR

UDC: 620.171.2

SKLYAROV, N. M., KONONCHUK, N. I., ISHCHENKO, I. I., POGREBNYAK, A. D., LOZITSKIY, L. P., SHIPIL', V. Ya., LAPITSKIY, Yu. A., SINAYSKIY, B. N., KUFAYEV, V. N., Kiev

"Determination of Durability of Heat-Resistant Alloys in Unstable Operating Modes Considering Brief Overloads"

Kiev, Problemy Prochnosti, No 3, Mar 73, pp 100-104.

Abstract: The specific features of application of the linear hypothesis of addition of damage during calculation and accelerated experimental determination of the guaranteed durability of parts operating with brief overloads during individual stages in the program of unstable loading with static and variable loads are studied, as well as problems of adjustment of the corresponding calculation characteristics for heat-resistant alloys. The concept developed by the authors is in that the share of durability expended at any moment is determined by successive addition of its parts for stages of the program under the combined influence of loads and temperatures in a quasi-stable mode for each stage; the sets of long-term static strength and endurance characteristics are utilized, considering the influence of the loading prehistory and the corresponding limiting curves for various

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USSR

SKLYAROV, N. M., et al, Kiev, Problemy Prochnosti, No 3, Mar 73, pp 100-104

temperatures and durabilities. The spectrum of loads is studied in combination with the sequence of their application, i.e., in time.

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USSR

UDC 539.385

LOZITSKIY, L. P., VETROV, A. N.

"Certain Problems in Studying the Longevity of High-Temperature Alloys Under the Interaction of Mechanical and Thermal Fatigue Processes"

Sb. nauch. tr. Kiyev. in-t inzh. grazhd. aviatsii (Collection of Scientific Works of the Kiev Institute of Civil Aviation Engineers), 1971, No. 1, pp 91-97 (from RZh-Mekhanika, No 12, Dec 71, Abstract No 12V1529)

Translation: A technique is presented for studying the longevity of structural heat resistant sheet materials under the simultaneous occurrence of mechanical and thermal fatigue processes. The construction of the test stand on which the sample is subjected to cyclic bending deformations is described in detail. The sample is heated by the transmission of electric current then cooled by an air blast. It is shown that this complex loading regime can be reduced to a certain simple equivalent regime consisting of a regime of loading with a constant normalized static stress with an additional vibration load at constant temperature. The order of calculating the values of the static stress and temperature is presented, assuming the principle of linear summation of the

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UDC 632.954:547.495

USSR

KUTLUKOVA, U. S., TOROPOV, A. P., and LOZOVATSKAYA, M. A., Tashkent Polytechnical Institute

"Determination of Monuron, Diuron, and Phenuron by the Method of Anode Voltamperometry"

Moscow, Khimiya v Sel'skom Khozyaistve, No 4, 1973, pp 56-58

Abstract: An analytical method is proposed for the determination of monuron, diuron, and phenuron in wetting powders, dusts, granules, and in soil based on polarographic measurements. The methodology was tested on synthetic mixtures of herbicides with known composition. Experimental error is ± 3%. The method is based on taking a polarographic curve of an aqueous methanolic solution of the agent, determining the concentration from a calibration curve.

LOZOVAYA N.G.

Acc. Nr: AP0045004 Abstracting Service: 5/70 INTERNAT. AEROSPACE ABST. Ref. Code: UR0109

A70-22413 # Photomultiplier TWT with a louvered secondary electron multiplier operating in the 600- to 900-MHz range (FEU-LBV s zhaliuznym vtorichno-elektronaym umnozhitelem, rabotaiushchaia v diapazone 600-900 Mgts). V. A. Afanas'ev, V. G. Zubov, N. I. Ekamasov, A. V. Ievskii, and N. G. Lozovaia. *Radiotekhnika i Elektronika*, Vol. 15, Jan. 1970, p. 155-161. 13 refs. In Russian.

Description of the design and parameters of a high-sensitivity photomultiplier TWT microwave photodetector with an internal louvered secondary-electron multiplier and a spiral high-frequency getter. The device is capable of detecting light modulated at frequencies ranging from 600 to 900 MHz. The photocathode sensitivity in experimental specimens at a wavelength of 0.63 micron amounted to 10 to 20 microamp/mW, the multiplication per stage is about 3 to 4, and the equivalent output resistance is about 10 to 100 kiloohms. A photomultiplier TWT with two or three multiplication stages is tens of times more sensitive than photo-TWT models of the same design but without a multiplier system. With its aid it is possible to receive light signals with a power of about 1 microwatt at a wavelength of 0.63 micron in a band of several tens of megahertz.

A.B.K.

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REEL/FRAME
19771900

USSR

UDC 581.132.04

CHIKOV, V. I., BULKA, M. Ye., and LOZOVAYA, V. V., Kazan' University and Tatar Agricultural Research Institute, Kazan'

"Effect of Insecticides on the Distribution of C^{14} in the Products of Photosynthesis"

Moscow, Fiziologiya Rasteniy, No 1, 1971, pp 190-193

Abstract: In pot experiments with 10- to 15-day-old bean (Vicia faba) plants (Russkiye chernyye variety), 4 organophosphorus insecticides slightly stimulated photosynthesis at low concentrations (0.1%) but inhibited it at high concentrations (0.5%). Treatment of the plants with the insecticides affected not only the intensity of photosynthesis but also the distribution of C^{14} in its products. Concentrations of 0.5 or below 0.1% suppressed the synthesis of sucrose while increasing the incorporation of the label into amino acids, organic phosphates, and organic acids. The nonspecific changes noted in the chemism of photosynthesis, like those brought about by high concentrations of ammonia, drought, organophosphorus defoliants, etc., apparently result from a deficiency of ATP caused by unfavorable factors.

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APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820016-9"

USSR

UDC 532.59:536.242

GANCHEV, B. G., KOZLOV, V. M., LOZOVETSKIY, V. V.

"Study of Descending Flow of Liquid Film on Vertical Surface and Heat Transfer to Film"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol. 20, No. 4, Apr. 71, p. 674-682.

Abstract: A theoretical and experimental study is presented of the measurement of local values of mean film thickness along the length of the film, and theoretical dependences are found for its determination in the laminar-wave (Re_δ<400) and turbulent (Re_δ>400) areas. Empirical formulas are derived for calculation of local values of the thickness of a continuous liquid layer. The velocity field in a continuous layer is determined and it is shown that the mean velocity is determining for flows of this type. The local heat transfer coefficient to the initial liquid film is studied experimentally. The experimental conditions show that α increases as the film flows down over a channeled surface. A formula is produced which describes the experimental points well.

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/2 029

TITLE--HYDRODYNAMICS OF FALLING LIQUID FILMS ON VERTICAL SURFACES -U-

AUTHOR-(04)-GANCHEV, B.G., KOZLOV, V.M., LOZOVETSKIY, V.V., NIKITIN, V.M.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., MASHINOSTR. 1970, (2), 75-80

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--HYDRODYNAMIC PROPERTY, SURFACE FILM, DISTILLED WATER, METAL TUBE, SURFACE WAVE, THERMAL MEASURING INSTRUMENT, FLOW PROBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/1639 STEP NO--UR/0145/70/000/002/0075/0080

CIRC ACCESSION NO--AT0133544

UNCLASSIFIED

UNCLASSIFIED

2/2 029 PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0133544

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A STUDY WAS MADE OF FALLING DISTD. H SUB2 O FILMS ON THE OUTER SURFACE OF A VERTICAL STEEL TUBE. THE MAX., MIN. AND AV. THICKNESS OF THE FILM, THE FREQUENCY AND AMPLITUDE OF WAVES ON ITS SURFACE AND ITS RATE OF FALL WERE MEASURED BY USING AN ELEC. MICROPROBE COMBINED WITH AN OSCILLOGRAPH AND A THERMAL ANEMOMETER WITH A W WIRE.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

1/2 041

TITLE--CALCULATION OF LOCAL VALUES FOR THE MEAN THICKNESS OF A TURBULENT FILM OF LIQUID FLOWING DOWN A VERTICAL SURFACE -U-

AUTHOR-(03)-GANCHEV, V.G., KOZLOV, V.M., LOZOVETSKIY, V.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IZVESTIYA VYSSHIKH UCHEBNYKH ZAEDENIY, MASHINOSTROYENIYE, NO. 1, 1970, PP 112-116

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TURBULENT FLOW, PLANAR FLOW, GRAVITATION FIELD, BOUNDARY LAYER THICKNESS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0535 STEP NO--UR/0145/70/000/001/0112/0116

CIRC ACCESSION NO--AT0100989

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--16OCT70

2/2 041

CIRC ACCESSION NO--AT0100989

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS PROPOSE A METHOD FOR CALCULATING THE LOCAL VALUES FOR THE MEAN THICKNESS OF A TURBULENT FILM OF FLUID FLOWING ALONG A VERTICAL SURFACE UNDER THE INFLUENCE OF GRAVITY. THE TECHNIQUE USED IS BASED ON A METHOD OF CALCULATING THE BOUNDARY LAYER. THE MATHEMATICAL TOOLS ARE DERIVED WHICH MAKE IT POSSIBLE TO DETERMINE HOW THE MEAN THICKNESS OF THE FILM VARIES WITH LENGTH ALONG A VERTICAL CHANNEL UNDER TURBULENT FLOW CONDITIONS. A GRAPH IS GIVEN WHICH COMPARES THE COMPUTATIONAL RELATIONSHIP AND THE RESULTS OF EXPERIMENTAL INVESTIGATIONS. THE AUTHORS CONCLUDE THAT THE AGREEMENT BETWEEN THE TWO IS EXCELLENT.

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

1/2 013

TITLE--EFFECT OF NONAQUEOUS SOLVENTS ON COMPLEXING IN THE TITANIUM THIOCYANATE ORGANIC BASE SYSTEM -U-

AUTHOR-(02)-TANANAYKO, M.M., LOZOVIK, A.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. NEORG. KHIM. 1970, 15(4), 1070-3

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--SOLVENT ACTION, TITANIUM COMPOUND, THIOCYANATE, COMPLEX COMPOUND, QUINOLINE, SOLVENT EXTRACTION, KETONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0078/70/015/004/1070/1073

PROXY REEL/FRAME--3007/1146

CIRC ACCESSION NO--AP0136566

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--04DEC70

2/2 013

CIRC ACCESSION NO--AP0136566

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF A SERIES OF NONAQ. SOLVENTS ON THE FORMATION, EXTN., AND OPTICAL PROPERTIES OF COMPLEX SALTS IN TI THIOCYANATE (I) ORG. BASE (DIANTIPYRYLMETHANE, ANTIPYRINE, QUINOLINE, AND DIPHENYLGUAINIDINE) SYSTEM. THE BEST EXTG. AGENTS WERE CHCL SUB3 AND DICHLOROETHANE. ALCS. COMPETE WITH SCN PRIMENEGATIVE FOR COORDINATION TO TI CAUSING FADING OF THE COLOR OF THE SOLNS. AND A SHIFT OF THE ABSORPTION MAX. TO SHORT WAVELENGTH REGION. KETONES GIVE STRONGLY COLORED SOLNS. WITH I AND ADDN. OF ORG. AMINES TO SUCH SOLNS. CAUSES PPTN. OF CORRESPONDING ONIUM SALTS OF (TI(NCS)) PRIME2NEGATIVE. IT IS ASSUMED THAT KETONES STRENGTHEN THE TI-NCS BONDS AND FAVOR FORMATION OF HIGHLY COLORED (TI(NCS) SUB6) PRIME2NEGATIVE.

FACILITY: KIEV. GOS. UNIV., KIEV, USSR.

UNCLASSIFIED

Acc. Nr. AT0049882 Abstracting Service: CHEMICAL ABST. 73 10 Ref. Code UR 0020

105470t Spectroscopic manifestations of phase transitions in crystalline cyclopentane. Zhizhin, G. N.; Lonovik, Yu. E.; Moskaleva, M. A.; Usmanov, A. (Inst. Spektrosk., Akademgorodok, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(2), 301–4 [Phys] (Russ). Phase transitions in mol. crystals cause changes in their ir spectra (width, intensity and splitting). The changes of bandwidth were used to det. phase transitions in cyclopentane. The absorption band was measured at 300–80°K. Sample thickness was 35 and 100 μ. The bandwidth decreased with decreasing temp. from 23 to 3.8 cm^{-1}. Its plot vs. temp. shows discontinuities at the temps. of freezing and transitions into different cryst. modifications. Freezing appears at 179.5°K as a change in the slope of the line and as the temp. is lowered further transition from cryst. phase *I* to *II* at 138.1°K is manifested as a decrease of bandwidth by 2 cm^{-1}; at 122.4°K transition of phase *II* to *III* appears as a decrease in bandwidth by 7 cm^{-1}. Anal. of the line segments corresponding to different phases allowed one to det. the barriers to rotational reorientations: 1.2 kcal/mole for the liq., 0.8 kcal/mole for phase *I* and 0.4 kcal/mole for phase *II*. In some of the samples of phase *III* dichroism could be obsd. by using polarized light. Roman Mykolajewycz

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REEL/FRAME
19801814

UDC 669.71.472(008.8)

USSR

LOZOVOY, YU. D., and BELYAYEV, L. A.

"Method of Firing the Bottom of an Aluminum Electrolytic Reduction Cell"

USSR Author's Certificate No 259399, filed 23 Oct 67, published 15 May 70 (from RZh-Metallurgiya, No 11, Nov 70, Abstract No 11 G111 P)

Translation: A method is proposed for firing the bottom of an aluminum electrolytic reduction cell during de heating on metal using shunt-rheostats. To prolong the life of the electrolytic reduction cells, the cells are switched on for firing after teeming of the molten Al onto a layer of solid Al which was previously laid out on the bottom surface.

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(3)

UDC 621.791.754

USSR

RABKIN, D. M., Doctor of Technical Sciences, ISHCHENKO, A. YA., Candidate of Technical Sciences, IGNAT'YEV, V. G., Candidate of Technical Sciences, LOZOVSKAYA, A. V., Candidate of Technical Sciences, SAYENKO, M. I., Engineer, Electric Welding Institute imeni Ye. O. Paton of the Academy of Sciences UkrSSR, KOZLOVSKAYA, V. P., Candidate of Technical Sciences, and IODA, M. V., [expansion unknown]

"Influence of Admixtures on the Mechanical Properties of Joints of 1201 Aluminum Alloy"

Kiev, Avtomaticheskaya Svarka, No 7(244), Jul 73, pp 53-55

Abstract: Mechanical test results of joints of aluminum alloys, 1201 type (0.15% Fe, 0.12% Si) and 01203 type (0.003% Fe, 0.02% Si), are discussed by reference to curves of the effect of temperature on the strength of the initial metal and the joint and of the effect on the relative elongation of the initial metal. The decrease of the total Fe and Al content to 0.06% in alloys of Al-Cu type improves the mechanical properties of the initial metal and of welded joints at normal temperature. The relative elongation, impact ductility, and the angle of bend of the initial metal and of joints of 01203 alloy are ~1.5 times higher than on 1201 alloy. The mechanical properties of both alloys

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USSR

RABKIN, D. M., et al., Avtomaticheskaya Svarka, No 7(244), Jul 73, pp 53-55

improve with decreasing temperature. At liquid He temperature, the resistance to rupture of the initial metal and of joints of 01203 alloy are somewhat higher than on 1201 alloy and the relative elongation of the initial metal is two times higher. Three figures, one table, four bibliographic references.

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USSR

UDC 621.791:546.621:532.72

LARIKOV, L.N., FAL'CHENKO, V.M., RYABOV, V.R., LOZOVSKAYA, A.V., KRAVCHENKO, A.G., and YEREMINA, A.N.

"Determination of Aluminum Self-Diffusion in Intermetallides Formed During Welding"

Kiev, Avtomaticheskaya Svarka, No 6, Jun 71, pp 71-72

Abstract: In the present work, conducted by the Institute of Electric Welding jointly with the Institute of Metal Physics, Academy of Sciences Ukrainian SSR, with the use of isotope Al^{26} self-diffusion was studied in samples of pure aluminum and Fe-Al alloys having the following intermetallic phases: $FeAl_3$, FeAl, Fe_3Al, Fe_2Al_5, and $FeAl_2$. Equations for the temperature relationship of self-diffusion coefficients were derived. 1 table, 2 bibliographical references.

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USSR

UDC: 681.92.94

GERSHBERG, I. M., KACHUR, M. M., LOZOVSKIY, A. M., Odessa Special Design Office of Polygraphic Machine Building

"An Installation for Applying a Photosensitive Layer to Form Plates"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 6, Feb 72, Author's Certificate No 328415, Division G, B, filed 5 Sep 68, published 2 Feb 72, p 144

Translation: This Author's Certificate introduces an installation for applying a photosensitive layer to printing plates. The unit contains a predrying chamber for the plates, a means of rotating the plates, a tank with the photosensitive solution and a plate-drying chamber. As a distinguishing feature of the patent, the unit is designed for continuous application of the photosensitive layer. The means for rotating the plates is made in the form of an electromagnetic cylinder with magnetizing and demagnetizing sectors.

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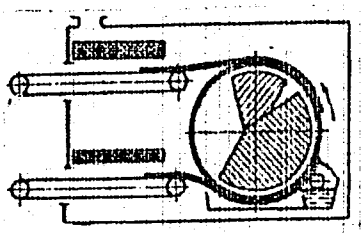
USSR

GERSHBERG, I. M. et al., USSR Author's Certificate No 328415



2/2

UDC: 621.382-181.4

USSR

LOZOVSKIY, V. N., POPOV, V. P.

"Zone Melting With a Temperature Gradient as a Method in Semiconductor Technology"

Kiev, Izvestiya VUZov, Radioelektronika, Vol 15, No 1, Jan 72, pp 3-12

Abstract: The authors present the physical and metallurgical principles of zone melting with a temperature gradient. In essence, the method consists in successive recrystallization of layers of solid phase by a liquid zone which moves in the crystal under the effect of a temperature gradient. The liquid zone is enriched by a component which depresses the melting point of the crystal, and the motion of the zone is due to processes within and on the boundaries of the liquid phase. Therefore the method can be used at temperatures considerably below the melting point of the crystal, the movement of the liquid zone does not require moving the heater, the maximum dimensions and form of the liquid zone do not depend on the size and shape of the crystal, and the position of the zone is not directly related to the position of the heater. A liquid zone of any configuration or a set of zones can be created simultaneously in a crystal of simple shape. As the zones move, epitaxial layers of a given geometry are formed

USSR

LOZOVSKIY, V. N., POPOV, V. P., Izv. VUZov, Radioelektron., No 1, 1972, pp 3-12

on the surface or within the initial crystal. A survey is given of applications of this method to the production of electronically heterogeneous structures in semiconductors. The relation between the electrical properties of the semiconductor structures and the zone melting technique is analyzed, and prospects for using the method in semiconductor technology are indicated. It is noted that the method is applicable not only to simple semiconductors, but to silicon carbide, sulfides, selenides, $A^{III}B^{V}$ compounds and so forth, and also to solid solutions. The basic weakness of the method is the lack of research which has been done on migration of liquid micro-inclusions under the effect of the temperature gradient. Four figures, bibliography of nineteen titles.

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USSR

UDC 536.421.4+536.421.1

LOZOVSKIY, V. N., GERSHANOV, V. Yu., KALINYUK, A. I., NIKOLAYEVA, Ye. A., POPOV, V. P., and UDYANSKAYA, A. I.

"Basic Laws of Silicon Crystallization for a Zone Melt With a Temperature Gradient"

V sb. Kristallizatsiya i faz. prevrashcheniya (Crystallization and Phase Transformations -- collection of works), Minsk, "Nauka i tekhn." 1971, pp 91-97 (from RZh-Fizika, No 9, 1971, Abstract No 9E382)

Translation: The kinetics of a zone melt with a temperature gradient are experimentally investigated in Si-Al, Si-Ag, Si-Au, Si-Fe, Si-Cu, Si-Ni, Si-Sn, Si-Pt systems. Curves expressing the dependence of the liquid zone migration rate on its thickness and temperature are obtained for these systems, the values of the activation energy of zone movement are found, and the effect of the third component on the zone velocity is determined; it is established that, in the region of fine zones and small temperature gradients, the stability of the zone movement is independent of the anisotropy of the solution and the crystallization; in the opposite case the morphology of the zone is determined by slowly dissolving planes of the (111) type. Author's abstract

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USSR

UDC 621.315.592.054.2

LOZOVSKIY, V. N., KALINYUK, A. I., and POLITOVA, N. F.

"Experimental Investigation of the Kinetics of Zone Melting With Temperature Gradient in the System Si-Al-Sn"

Tr. Novocherk. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, 208, pp 34-38 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G385)

Translation: For conducting zone melting with temperature gradient in the system Si-Al-Sn, flat zones are used in the form of foil, made of Al-Sn alloy with 20 to 80% Si, and Si of the brand KEF with resistivity of 20-30 ohm·cm in the form of rectangular parallelepiped 1 x 4 x 8 mm. The zone melting with temperature gradient is carried out in a vacuum gradient furnace. The temperature gradient is estimated on the basis of special measurements conducted on model specimens without zone, but within the same temperature interval and under the same geometrical conditions as the specimens. The temperature dependence of the rate of migration of the liquid zone of Si-Al-Sn disregarding the composition is well approximated by the exponential function in the temperature range 700-1000°. The preexponential multiplier depends on the zone composition and temperature gradient, and the indicator of the degree of the

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USSR

LOZOVSKIY, V. N., et al., Tr. Novocherk. politekhn. in-ta, 1970, 208, pp 34-38 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G385)

exponent diminishes with increased concentration of Sn in the liquid zone. This fact corresponds well with the decrease in activation energy of the process of diffusion of Sn atoms in Sn-Al melt during the increase of Sn concentration. 12 bibl. entries.

YU. Zotov

2/2

USSR UDC 621.315.592.3:669.782

LOZOVSKIY, V. N., POPOV, V. P., and DAROVSKIY, N. I.

"Investigation of Disruptive Voltage of p-n-Transitions by the Method of Zone Melting With Temperature Gradient on Linear Zones"

Tr. Novocherk. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, 208, pp 57-64 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G386)

Translation: Sb doped n-Si with a resistivity of 0.01 ohm·cm was used. Specimens were cut out in the form of plates 1.2 mm thick and oriented according to facet (110). Linear Al-zones 100 mk in diameter were oriented in the direction [110]. The temperature range varied from 800 to 1250° with temperature a gradient of ~ 100 deg/cm. The change in disruptive voltage of the p-n-transition along the entire thickness of the Si plates was determined at a current density of 5 ma/mm^2 in thin layers of Si (~ 100 mk). In general, the disruptive voltage of plane silicon p-n-transition changed in the direction of zone motion, a fact related to the initial instability of the zone and diversity of time and temperature conditions of the formation of p-n-transition at different points along the trajectory of the zone. A method is proposed

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LOZOVSKIY, V. N., Tr. Novocherk. politekhn. in-ta, 1970, 203, pp 57-64 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G386)

for the elimination of nonuniformity of the disruptive voltage of the p-n-transition by additional annealing of the specimen in the field of the temperature gradient after zone melting with the temperature gradient. 2 ill., 11 bibl. entries.

O. Myakisheva

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UDC 621.315.592.3:669.782

USSR

LOZOVSKIY, V. N., KALINYUK, A. I., and BUDDO, V. I.

"Zone Melting With a Temperature Gradient in the System Silicon-Tin"

Tr. Novocherk. politekhn. in-ta (Works of the Novocherkassk Polytechnical Institute), 1970, 208, pp 50-54 (from RZH-Metallurgiya, No 11, Nov 70, Abstract No 11G387)

Translation: Results are presented of an experimental investigation of the patterns of motion of Sn-Si melted zone in Si single crystals. Sn with 99.999% purity and Si KEF with a resistivity 20-30 ohm·cm were used. The specimens had the shape of rectangular parallelepipeds 0.5-1 mm thick with a 4 x 8 mm area, and were cut out along the facet (111). The tin zones, in the form of foil, were placed between two specimens, one of which in the process of zone melting with temperature gradient was melted, while the second served as a seed charger. The obtained composition was first placed into a vacuum furnace for doping. The zone melting was conducted in a special vacuum gradient furnace under conditions when convection in the liquid phase could not be developed. The results coincided with the Tiller theory. 2 ill., 9 bibl, entries.

O. Myakisheva

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USSR UDC 621.382.002

LOZOVSKIY, V.N., NIKOLAYEVA, Ye.A., UDYANSKAYA, A.I., [illegible], V.N.

"Forming Of Electrically Heterogeneous Microstructure In Crystals By The Zone Melting Method With A Temperature Gradient"

V sb. Vopr. mikroelektroniki (Problems Of Microelectronics--Collection Of Works), Kiev, "Nauk.dumka," 1971, pp 167-172 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B128).

Translation: In the volume of low-resistance Si, microregions are produced with resistivities equal to (1-2) . 10^2 ohm.cm; p-n junctions are easily obtained with the aid of linear aluminum zones in n-Si, and zones of complex composition make it possible to introduce certain impurities into the crystal; zone melting with a temperature gradient makes it possible to create p-n junctions with an inverse impurity gradient, and others.

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USSR UDC 621.382.002

LOZOVSKIY, V. N., NIKOLAYEVA, Ye. A., POPOV, V. P., UDYANSKAYA, A. I., GERSHANOV, V. Yu.

"Concerning the Dimensions and Configuration of Electrically Heterogeneous Structures Obtained by the Zone Melting Method With a Temperature Gradient"

V sb. Vopr. mikroelektroniki (Problems of Microelectronics -- Collection of Works), Kiev, "Nauk. dumka," 1971, pp 163-167 (from RZh--Elektronika i yeye primeneniye, No 10, October 1971, Abstract No 10B429)

Translation: The geometrical characteristics are considered of electrically heterogeneous structures obtained in Si by the zone melting method with a temperature gradient as a function of the dimensions and form of the liquid zone, and also the form of its path. It is shown that zone melting with a temperature gradient makes it possible to form microstructures with diversified dimensions and form: multilayer, perpendicular surfaces of rectangular form; grid structures; cylindrical channels; and others. Using metal sputtering and subsequent photolithography, it is possible to obtain structures of practically any configuration. 1 ill. 5 ref. I.M.

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UDC: 518.5:681.3.06

USSR

LOZOVSKIY, V. S.

"Programs for Spectral Analysis in the Frequency and Time Regions"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 45, Novosibirsk, "Nauka", 1971, pp 126-170 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V961)

Translation: The authors describe a program for a spectral-band analyzer in which the Fourier transform is calculated by the Kuli-T'yuki method ("AST-60"), and a program for band analysis utilizing digital filtration ("Urfin-44"). The programs are written in the ALPHA language (Algibr System) and are designed for calculation on the BESM-6 computer. In both programs, the analysis involves two aspects: determining the frequency of the fundamental tone if it is present, and obtaining the envelopes of signal amplitudes in channel filters. V. Mikheyev.

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USSR UDC 619:616.981.57-097

LUARSABISHVILI, A. G., All Union Institute of Experimental Veterinary Science

"Immunizing Properties of Various Antigens Prepared from Clostridial Cultures"

Moxcow, Veterinariya, No 9, Sep 70, pp 46-47

Abstract: The immunogenic activity was studied of antigens prepared from Clostridium septicum and Cl. chauvoei by treatment with formalin (0.5%), chlorotetracycline 5000 gamma/ml or quinosol (1%), or by subjecting the culture to the effect of high temperature. Avirulent strain No. 135 of Cl. chauvoei cultured on Kitt-Tarozzi medium was also used as an antigen. In experiments in which rabbits were given antigens and rabbit serum injected into guinea pigs, the immunogenic effect of the serum on guinea pigs decreased in the order: avirulent live culture > formol antigen (formol vaccine) > biomycin vaccine > quinosol vaccine. The heated vaccine was ineffective. With direct immunization, the resistance of experimental animals to infection with a virulent culture decreased in the following order: live avirulent culture > formol vaccine > biomycin vaccine > quinosol vaccine > heated vaccine.

- END -

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5915
CSO: 1840-W

USSR UDC: 621.397.12

BAKHTOV, I. S., LUBANOV, S. P., MEL'NIK, O. S.

"Is it Advisable to Convert Facsimile Equipment to Frequency Modulation?"

Moscow, Elektrosvyaz', No 8, 1971, pp 45-51

Abstract: For a number of reasons, the authors feel that amplitude modulation should be given preference over frequency modulation in wirephoto systems. After comparing the basic parameters of the two methods of modulation, i. e. interference-killing properties, channel loading, the frequency spectrum occupied and transmission speed in the given channel, it is concluded that the use of frequency modulation in transmission of line and halftone images not only fails to improve image quality, but at the same time results in a reduction of transmission speed, complicates the equipment considerably, and eliminates the capability for utilizing low saturation by information signals. The authors feel that changing the entire facsimile installation over to frequency modulation is not the only way to reduce loading of the communications channel and raise the resistance to interference. As a

USSR

BAKHTOV, I. S. et al., Elektrosvyaz', No 8, 1971, pp 45-51

basic method of signal transmission, they recommend amplitude modulation by positive signals, using frequency conversion attachments in cases where the operating conditions of the channels call for frequency modulation.

Acc. Nr: AP0055909 Abstracting Service: (7)0 Ref. Code:
INTERNAT. AEROSPACE ABST. UR 0065

LUBARSKIY I.M.

A70-25943 # Investigation of the efficiency of the VNII NP-213 solid lubricating coating (Issledovanie rabotosposobnosti tverdogo smazochnogo pokrytiia VNII NP-213). G. V. Kurilov, L. N. Sentiurikhina, I. M. Liubarskii, and V. F. Udovenko (Vsesoiuznyi Nauchno-Issledovatel'skii Institut Neftianoi Promyshlennosti, Moscow, USSR; Akademiia Nauk Ukrainskoi SSR, Fiziko-Tekhnicheskii Institut Nizkikh Temperatur, Kharkov, Ukrainian SSR). *Khimiia i Tekhnologiia Topliv i Masel*, vol. 15, no. 3, 1970, p. 49-53. 12 refs. In Russian.

Experimental investigation of the service life and friction coefficient of a solid lubricating coating (not further specified, but appearing to contain molybdenum disulfide and silicon) as a function of the load, sliding rate and vacuum level. Test were performed with a film (20 microns) deposited on the surfaces of a sliding contact at a pressure of 2 atm. The efficiency of the coating at high-temperatures in air was also studied. It is found that the friction coefficient decreases with increasing load both in dry and humid air and in vacuum. At high sliding rates and nigh loads, the temperature and friction coefficient increase and the service life decreases. In vacuum, the service life is 4 to 6 hr at a relative humidity of 50 to 70 percent and 13 to 14 hr in dry air.

V.P.

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19841236

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UDC 547.495.9 + 615.717

STANKEVICHUS, A. P., LUBAS, A. A., and KOST, A. N., Kaunas Medical Institute

"Cyclic N-Carboxamidines. II. Morpholine and Piperazine Derivatives"

Moscow, Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 1, Jan 71, pp 13-16

Abstract: A series of title compounds was synthesized in a structure-activity study of benzylguanidines. A mixture of 19 g morpholine, 28 g S-methylisothiourea sulfate and 15 ml water was heated for 3 hrs, cooled, the separated crystals were filtered, washed and dried to yield morpholyl-N-carboxyamidine hemisulfate, m.p. 303°. N-benzyl-N'-(o-chlorobenzyl)guanidine hydroiodide, m.p. 120° was obtained by reacting 43.1 g S-methyl-N-benzylisothiourea hydroiodide, 19.7 g o-chlorobenzylamine and 100 ml water. After heating for 2.5 hrs the mixture was left standing overnight, water layer was decanted, the residual material crystallized from ethanol. To obtain sym-tribenzylguanidine hydrochloride, m.p. 205°, a mixture of 4.13 g S-methyl-N,N'-dibenzyl-

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USSR

STANKEVICHUS, A. P., et al., Khimiko-Farmatsevticheskiy Zhurnal, Vol 5, No 1, Jan 71, pp 13-16

isothiourea hydroiodide, 1.1 g benzylamine and 25 ml water was heated 3 hrs, cooled, the aqueous layer was decanted, residual layer dissolved in dimethylformamide, shaken with 10% NaOH, extracted repeatedly with ether, dried, filtered, and acidified. Analogously N,N'-dibenzylguanidine hydrochloride, m.p. 186 was obtained. In another experiment 143 g. benzylamine hydrochloride and 97.2 g potassium thiocyanate in 50 ml water were heated on a steam bath, extracted with hot ethanol, evaporated, the residue was heated for 2 hrs at 155-160°, cooled, and extracted with water. Recrystallization from ethanol gave N-benzylthiourea, m.p. 160-161°. The remaining residue after water extraction was N,N'-dibenzylthiourea, m.p. 148°. Analogously N-o-chlorobenzylthiourea, m.p. 126°, and N,N'-bis-o-chlorobenzylthiourea, m.p. 130° were obtained as well as 1,2,3,4-tetrahydroisoquinoline-N-thiocarboxamide, m.p. 160-161°. Toxicity and very general biological effects of the compounds synthesized are mentioned.

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UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 021

TITLE--TOXICOLOGICAL AND ANTISEROTONIN PROPERTIES OF SOME GUANIDINE DERIVATIVES -U-

AUTHOR-(03)-LUBAS, A.A., STANKYAVICHYUS, A.P., SHADURSKIY, K.S.

COUNTRY OF INFO--USSR

SOURCE--FARMAKOLOGIYA I TOKSICOLOGIYA, 1970, VOL 33, NR 1, PP 17-21

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--GUANIDINE, AMINE DERIVATIVE, BENZENE DERIVATIVE, ORGANIC SULFUR COMPOUND, SEROTONIN, INHIBITION, NERVOUS SYSTEM DRUG, TOXICOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/1423 STEP NO--UR/0390/70/033/001/0017/0021

CIRC ACCESSION NO--AP0130366

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--27NOV70

2/2 021

CIRC ACCESSION NO--AP0130366

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. MICROFICHE OF ABSTRACT CONTAINS GRAPHIC INFORMATION. THE TOXICITY OF THE INVESTIGATED COMPOUNDS INCREASES WHEN ONE AMINO GROUP FROM GUANIDINE IS REPLACED BY A PHENYL, METHYLTHIO, OR BENZYL GROUP. IT IS DECREASED WHEN AN AMINO GROUP IS INCORPORATED INTO THE HETEROCYCLIC SYSTEM. IN MICE THE INTOXICATION PASSES THROUGH A BRIEF EXCITATION STAGE, FOLLOWED BY DEPRESSION. COMPOUNDS WITH METHYLTHIO GROUPS PRODUCE NO DEPRESSION. COMPOUNDS WITH TWO OR THREE BENZYL GROUPS AT THE GUANIDINE NITROGEN SHOW ANTISEROTONIN ACTIVITY. FACILITY: KAUNASSKIY MEDITSINSKIY INSTITUT.

UNCLASSIFIED

USSR

UDC 615.31:547.495.97.099+615.31:547.495.97.015.4:612.018:547.757

LUBAS, A. A., STANKYAVICHYUS, A. P., and SHADURSKIY, K. S., Central Scientific Research Laboratory, Kaunas Medical Institute, Kaunas, Ministry of Health Lithuanian SSR

"Toxicological and Antiserotonin Properties of Some Guanidine Derivatives"

Moscow, Farmakologiya i Toksikologiya, Vol 33, No 1, Jan-Feb 70, pp 17-21

Abstract: The toxicological properties and antiserotonin activity of 11 guanidine derivatives with a structure based on benzylamine, morpholine, or piperazine (table) were studied. The toxicity was determined on mice and the antiserotonin activity in experiments on rats and mice. The toxicity increased on replacement of one of the NH_2 groups with Ph, MeS, or CH_2 Ph and decreased considerably on inclusion of this group into a morpholine or piperazine ring. Intoxication in mice was manifested by a brief excitation phase that changed into depression. Upon the action of a compound with an MeS group, the depression phase was absent. An antiserotonin

USSR

LUBAS, A. A., et al, Farmakologiya i Toksikologiya, Vol 33, No 1, Jan-Feb 70, pp 17-21

activity was exhibited by the compounds $PhCH_2NHC(=NH)NHCH_2Ph \cdot HCl$ (I), $PhCH_2NHC(=NCH_2Ph)NHCH_2Ph \cdot 3HCl$ (II), and $p\text{-}ClC_6H_4CH_2NHC(=NH)NHCH_2Ph \cdot HCl$ (III). I, II, and III in a concentration of 1 X 10-5 g/ml prevented completely spasms of a section of the large intestine of rats produced by serotonin and inhibited development of diarrhea induced by 5-hydroxytryptophan in mice when administered in doses of 14.1, 5, and 16 mg/kg for I, II, and III respectively. These doses were effective in preventing diarrhea in 75, 80, and 50% of cases, respectively, after 5- hydroxytryptophan in a dose of 50 mg/kg had been injected intraperitoneally to the mice.

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LUBASHEVSKIY, A.V.

Microelectronics.

JPRS 57333
25 October 1972

MICROELECTRONICS

Excerpts from Russian-language book edited by F. V. Lukin; Mikroelektroniku, No 5, 1972, Sovetskoye Radio Publishing House, Moscow, UDC 621.382:621.396.6-181.5.

CONTENTS

This article examines the basic physical effects generated in MDP transistors during irradiation. The influence of these effects are described on the degradation of the parameters of the MDP transistors. Formulas are given for computation of the volt-ampere characteristics during irradiation. The radiational resistance of the integrated circuits on bipolar and MDP transistors is discussed.

The article contains 5 figures, 1 table, and 15 bibliographic references.

UDC 621.396.6-181.5
691.178.14-518.5

A Method of Computing Major Integrated Circuits on MDP Transistors With Supplementing Types of Conductivity. Balik, V.N. and Gordeyev, E.K. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 79, Sovetskoye Radio Publishing House, 1972.

The article concerns the computation and optimization of major integrated circuits on supplementing MDP transistors. Optimization criteria for major integrated circuits are suggested.

It is shown that the problem of computing major integrated circuits can be reduced to determining the minimum of the linear function of regulable (determined) parameters of the major integrated circuit in the region of the determination, whose boundaries are nonlinear and have a statistical scatter. The algorithms developed for solving this problem by computation on a computer are cited.

The article contains 11 figures and 11 bibliographic references.

UDC 621.382.8

The Influence of Geometric Dimensions of Active Components on Speed of Response of Micropower Transistor-Transistor Logic of Integrated Circuits. Belyakov, Yu.N., Smolko, G.G., and Lubashevskiy, A.V. In the Collection Mikroelektronika, edited by F.V. Lukin, No 5, p 98, Sovetskoye Radio Publishing House, 1972.

On the basis of experimental data and from the geometric dimensions of transistor structures a computation is given of the capacitances per unit of area of the end and side surfaces of three transistor contacts. It is shown that the speed of response of the micropower TTL of the integrated circuits to a significant degree is determined by

the dimensions of the active components, the influence of the dimensions being more significant as the required power of the circuit is less. The authors study the influence of the capacitance of the emitter junction of a microemitter transistor on the speed of response of the TTL of the circuit.

The article contains 6 figures, 2 tables, and 4 bibliographic references.

UDC 621.396.6-181.5

Basic Ways of Increasing the Quality of Logic Integrated Microcircuits. Yanushonis, S.S., In the Collection Mikroelektronika, edited by I.V. Lukin, No 5, p 110, Sovetskoye Radio Publishing House, 1972.

This article defines the functional relationship between the product Pt and other physical parameters of space, bounded by an arbitrary surface. On the basis of the obtained dependence the article discusses ways of increasing the speed of response and decreasing the scattering power of the logic integrated microcircuits.

The article contains 2 bibliographic references.

UDC 621.382.21

Use of Nonlinear Programming for Optimal Computation of the Geometric Dimensions of the Regions of Transistors of Integrated Circuits. Kazennov, G.G., Batalov, B.V., Lebedeva, A.V., and Rudenko, A.A., In the Collection Mikroelektronika, edited by I.V. Lukin, No 5, p 118, Sovetskoye Radio Publishing House, 1972.

A method is suggested for solving problems of synthesizing active components based on the use of nonlinear programming equipment. The article gives a block-diagram of the program algorithm and a specific example of the optimal computation of the geometric dimensions of the regions of a transistor for an integrated semiconductor circuit.

The article contains 4 figures, 1 table, and 8 bibliographic references.

UDC 621.396.6-181.5

Structure of Micropower Integrated Memories on Uniform Subsystems on Supplementing MDP Transistors. Gordeyev, B.K. et al., In the Collection Mikroelektronika, edited by I.V. Lukin, No 5, p 128, Sovetskoye Radio Publishing House, 1972.

USSR UDC 612.13-088.4

SAAKOV, B. A., LUBE, V. M., SHEPOTINOVSKIY, V. I., and TITKOV, B. P., Rostov Medical Institute

"The Regional Blood Circulation Studied by the Ultrasound Method"

Moscow, Byulleten' Eksperimental'noy Biologii Meditsiny, No 5, 1971, pp 116-119

Abstract: A bloodless method of deep zonal ultrasonic sphygmography based on the principles of acoustic bioecholocation is described. It yields specific information about the state of any part of the vascular system regardless of its site (in bone canals, skull, soft tissues, etc.) or the amount of ultrasound absorbed by the tissues surrounding a blood vessel. An ultrasonic sensor using a reverse and direct piezo effect emits short acoustic impulses toward a blood vessel under study and receives a signal reflected from it. If there is an increase in the volume of blood entering the vessel, its diameter widens, thereby increasing the area of the lateral reflecting surface. The amplitude of the reflected signal grows at the same time. If there is a decrease in the volume of blood entering the vessel, its diameter narrows and the amplitude of the reflected signal decreases accordingly.
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USSR

SAAKOV, B. A., et al., Byulleten' Eksperimental'noy Biologii Meditsiny, No 5, 1971, pp 116-119

Thus, changes in the amplitude of the signal are proportional to the degree of blood supply of the vessel. These changes are recorded on an ink-writing device.

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S/019/62/000/008/104/121
A154/A126

24,1200

AUTHORS: Lube, V. M., Konstantinov, V. N.

TITLE: A method of measuring velocity and absorption of ultrasound in liquid media

PERIODICAL: Byulleten' izobreteniy, no. 8, 1962, 73

TEXT: Class 42o, 13_{06}. No. 146609 (739388/26-10 of July 24, 1961). A method of measuring ultrasound velocity and absorption in liquid media uses a pulse generator, amplifiers, emitters, sensors, vessels for investigated media and an indicator. It differs from others in that, to permit measurings in media characteristic of sharply varying attenuations, and at the same time widening measurement range and accuracy, the control signal is fed into the transmitting channel, to maintain in the acoustic channel a signal/noise ratio of a desired level. This control signal corresponds to a function of signal/noise ratio prevailing at a given moment at the indicator unit input.

Card 1/1

Acc. Nr. AP0053777 Abstracting Service: CHEMICAL ABST. 5/70 Ref. Code UR0366

110954h (Polyfluoroaryl)methanes and their derivatives. V. Reaction of tris(polyfluoroaryl)methanols with sodium methylate. Lubenets, E. G.; Gerasimova, T. N.; Furov, V. V.; Barkhash, V. A. (Novosibirsk. Inst. Org. Khim., Novosibirsk, USSR). *Zh. Org. Khim.* 1970, 6(2), 365-8 (Russ). The reaction of MeONa with $Ph_2C(OH)C_6F_5$ in MeOH at 20-50° gave C_6F_5H (I), Ph_2CO, and 2,3,5,6-tetrafluoroanisole. Similarly, $(C_6F_5)_2C(OH)Ph$ or $PhCOC_6F_5$ reacted with MeONa to give $PhCOC_6F_4OMe$-4, I, and $PhCO_2Me$. $(C_6F_5)_2COH$ or $(C_6F_5)_2CO$ reacted with MeONa to give a mixt. of 2,4-$(MeO)_2C_6F_3COC_6F_4OMe$-4, $[2,4\text{-}(MeO)_2C_6F_3]_2CO$, 4-$MeOC_6F_4CO_2Me$, and 2,4-$(MeO)_2C_6F_3CO_2Me$. CPJR

REEL/FRAME
19830840

1/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--SLAG FORMING MIXTURE -U-

AUTHOR-(05)-KUKLEV, V.G., SHALIMOV, A.G., VOINOV, S.G., LUBENETS, I.A., ZHUKOV, D.G.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,923
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--04FEB70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--METALLURGIC PATENT, METALLURGIC SLAG, LIQUID METAL, SILICON DIOXIDE, ALUMINUM OXIDE, IRON OXIDE, CALCIUM OXIDE, MAGNESIUM OXIDE, SODIUM OXIDE, POTASSIUM OXIDE, CARBON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3003/1058 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130093

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AA0130093
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A SLAG FORMING MIXT. FOR PROTECTING THE SURFACE OF A MOLTEN METAL ALLOY FROM COOLING AND OXIDN. DURING CASTING CONSISTED OF: SIO SUB2 36-50, AL SUB2 O SUB3 25-35, FEO 3-10, CAO 3-9, MGO 1-4, (NA SUB2 O PLUS K SUB2 O) 0.2-4, C 9-15, FLUORITE 1-6, AND NA SUB2 CO SUB3 1-7PERCENT. FACILITY: BARDIN, I. P. CENTRAL SCIENTIFIC RESEARCH INSTITUTE OF FERROUS METALLURGY.

UNCLASSIFIED

USSR UDC 548.4

NOVIKOVA, I. G., LUBENETS, S. V., and STARTSEV, V. I., Physico Technical Institute of Low Temperatures, Academy of Sciences UkrSSR

"Study of the Microstructure of KCl Alkali-Halide Single Crystals by Lang's Method"

Kiev, Metallofizika, No 31, 1970, pp 132-139

Translation: It is shown that x-ray diffraction topography as applied to KCl alkali-halide single crystals without impurity and alloyed barium and lead cations can give important information on the dislocation structure in the volume of a specimen. The boundaries of low-angle blocks oriented toward the observation surface in various ways and dislocation networks embedded in the volume of and within the blocks were detected by the Lang method. Individual cases of a good contrast on individual dislocations, the effect of the thickness of a crystal on the image contrast of the imperfections during a change of μt in the interval 0.35-2.7, and a change in contrast in the points of intersection of orthogonal slip lines were revealed. The characteristics of the microstructure disclosed by x-ray diffraction topography were compared with the data obtained by means of etching, by the polarization optical method, and during observation in an ultramicroscope. Bibliography: 14 entries, 5 illustrations. 1/1

USSR UDC: None

LUBENETS, V. D., PLASTININ, P. I., MOISEYENKO, L. A., and GRIGOROV, V. P.

"Rotor-Piston Compressor"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 33, 1972, p 77, Author's certificate No (11)357371

Abstract: The compressor contains a three-sided rotor with a cylindrical valve, turning inside a body with an epitrochoid inner surface. The rotor and its valve produce a step-wise cylindrical flow to increase the compressor's capacity. A diagram of the device is provided.

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USSR UDC 621.51

SUKHOMLINOV, I. YA. (Candidate of Technical Sciences), BELOTELOVA, L. N. (Aspirant), KHMARA, V. N. (Candidate of Technical Sciences), and LUBENETS, V. D. (Doctor of Technical Sciences), Moscow Higher Technical School imeni N. E. Bauman

"Determination of the Velocity Field at the Entrance to an Axial Stage Working in Low Vacuum Modes"

Moscow, IVUZ Mashinostroyeniye, No 1, Jan 70, pp 72-76

Abstract: The article presents a method for calculating the velocity field at the entrance to an axial vacuum stage which depends on the flow made in the flow-through section of the stage. The results of calculation according to the presented method and their comparison with experimental data are given. The computations are based on results obtained for the hydrodynamic entrance region of a flat duct by R. Gupta (Journal of the Amer. Inst. of Chem. Eng., Vol 11, No 6, 1965). The calculation error, which amounts to approximately 10 percent, increases with increased intensity of change in the initial velocity vertically within the duct.

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1/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DETERMINATION OF THE VELOCITY FIELD AT THE ENTRANCE TO AN AXIAL STAGE WORKING IN LOW VACUUM MODES -U-

AUTHOR-(04)-BELOTELOVA, L.N., SUKHOMLINOV, I.YA., KHMARA, V.N., LUBENETS, V.D.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, IVUZ MASHINOSTROYENIYE, NO 1, JAN 70, PP 72-76

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--AXIAL FLOW TURBINE, TURBINE FLOW, TURBINE STAGE, FLOW VELOCITY, CALCULATION, VACUUM MECHANICS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1987/0232 STEP NO--UR/0145/70/000/001/0072/0076

CIRC ACCESSION NO--AP0103894

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0103894

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ARTICLE PRESENTS A METHOD FOR CALCULATING THE VELOCITY FIELD AT THE ENTRANCE TO AN AXIAL VACUUM STAGE WHICH DEPENDS ON THE FLOW MADE IN THE FLOW THROUGH SECTION OF THE STAGE. THE RESULTS OF CALCULATION ACCORDING TO THE PRESENTED METHOD AND THEIR COMPARISON WITH EXPERIMENTAL DATA ARE GIVEN. THE COMPUTATIONS ARE BASED ON RESULTS OBTAINED FOR THE HYDRODYNAMIC ENTRANCE REGION OF A FLAT DUCT BY R. GUPTA (JOURNAL OF THE AMER. INST. OF CHEM. ENG., VOL 11, NO 6, 1965). THE CALCULATION ERROR, WHICH AMOUNTS TO APPROXIMATELY 10 PERCENT, INCREASES WITH INCREASED INTENSITY OF CHANGE IN THE INITIAL VELOCITY VERTICALLY WITHIN THE DUCT. FACILITY: MOSCOW HIGHER TECHNICAL SCHOOL IMENI N. E. BAUMAN.

UNCLASSIFIED

Single Crystals

USSR UDC 669.28:559.374

YASTREBKOV, A. A., OPLESNIN, B. A., LUBENETS, V. P., KOSYREV, Yu. N., and YAKUTOVICH, M. V.

"The Annealing of Plastically Bent Molybdenum Single Crystals"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 4, Apr 71, pp 843-848

Abstract: Structural changes and kinetics of polygonization by annealing plastically bent single crystals of molybdenum of four orientations were investigated by X-ray and metallographic methods. It was found that the deformation character depends on the crystal orientation. Kinetics of substructural changes by isothermal annealing in the temperature interval of 1700°C to 2500°C and the extinguishing character of the growth of polygons are discussed. The investigation results are analyzed by reference to microstructures, topograms, and the established dependence of the change of the orientation angle of neighboring blocks on the aging time by isothermal annealing. Four illustr., five biblio. refs.

1/1

1/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--DOUBLE LABELING OF CELLS WITH PRIME3 H,THYMIDINE AT VARIOUS STAGES OF THE MITOTIC CYCLE -U-
AUTHOR-(02)-LUBENNIKOVA, E.I., SHAPIRO, I.M.

COUNTRY OF INFO--USSR

SOURCE--TSITOLOGIYA 1970, 12(1), 133-6

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--TRITIUM, CHEMICAL LABELLING, TISSUE CULTURE, HAMSTER, CULTURE MEDIUM, AUTORADIOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1990/0336 STEP NO--UR/9053/70/012/001/0133/0136

CIRC ACCESSION NO--AP0108634
UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0108634

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CELL CULTURE OF CHINESE HAMSTER FIBROBLAST STRAIN B11 DII FAF-28, CLONE 432 GROWN IN MEDIUM 199 CONTG. 15PERCENT BOVINE SERUM IN AN ATM. OF 6PERCENT CO SUB2 AT 37DEGREES WAS LABELED BY A 15 MIN PULSE OF THYMIDINE PRIME3 H (0.5-1.0 MU CI-ML). AFTER WASHING WITH THE MEDIUM CONTG. 10 MU G NONLABELED THYMIDINE-ML, THE CELLS WERE CULTIVATED IN THE MEDIUM WITH THYMIDINE PRIME3 H, 10 NEGATIVE PRIME3 MU CI-ML. IT WAS FOUND AUTORADIOGRAPHICALLY THAT THE CELLS WHICH WERE IN THE G SUB1, S, AND G SUB2 PHASES AT THE TIME OF PULSE LABELING COULD BE DISTINGUISHED IN METAPHASE AS LIGHTLY LABELED, HEAVILY LABELED, AND UNLABELED CELLS, RESP. FACILITY: INST. DEVELOP. BIOL., MOSCOW, USSR.

UNCLASSIFIED

1/3 025 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--INFLUENCE OF ANION COMPOSITION AND PH OF ELECTROLYTES ON THE ADSORPTION AND PROTECTIVE ACTION OF SOME INHIBITORS OF IRON CORROSION.
AUTHOR-(02)-POOOBAYEV, N.I., LUBENSKIY, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHIM. (LENINGRAD) 1970 43(2) 354-61

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--IRON CORROSION, ELECTROLYTE, LOW CARBON STEEL, CORROSION INHIBITOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0773 STEP NO--UR/0080/70/043/002/0354/0361

CIRC ACCESSION NO--AP0111960
UNCLASSIFIED

2/3 025 UNCLASSIFIED PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0111960

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECT OF DIFFERENT ANIONS ON THE CORROSION RATE, STEADY STATE POTENTIAL, AND DOUBLE LAYER CAPACITANCE OF FE (MILD STEEL OR ARMCO) WAS SYSTEMATICALLY INVESTIGATED IN O OR H SATD. ELECTROLYTES OVER A WIDE PH RANGE. THE INFLUENCE OF ANIONS ON THE ADSORPTION AND INHIBITIVE PROPERTIES OF FE CORROSION RETARDERS IN ACIDIC OR NEUTRAL MEDIA WAS EVALUATED. THE ELECTROLYTES CONTAINED NA PRIME POSITIVE AND CL PRIME NEGATIVE, CLO SUB4 PRIME NEGATIVE, SO SUB4 PRIME2 NEGATIVE, F PRIME NEGATIVE, ACO PRIME NEGATIVE, AND HCO SUB2 PRIME NEGATIVE. THE EXPTL. RESULTS WERE ANALYZED BASED ON MODERN THEORETICAL CONCEPTS. IT IS PRESEUMED THAT ANIONS PLAY A PREDOMINANT ROLE IN THE RATHER COMPLICATED ELECTRODE PROCESSES. THE CORROSION RATE OF FE UNDER H, O, OR MIXED H-O DEPOLARIZATION CONDITIONS IS STRONGLY AFFECTED BY ANION COMPN. IN ACIDIC MEDIA, WHERE INSOL. FE HYDROXIDES ARE NO PRESENT, THE INHIBITIVE EFFECT OF ANIONS INCREASES WITH THE INCREASE OF THEIR SURFACE ACTIVITY. CORROSION RATE DECREASES IN THE ORDER: HCO SUB2 PRIME NEGATIVE GREATER THAN ACO PRIME NEGATIVE GREATER THAN SO SUB4 PRIME2 NEGATIVE GREATER THAN (H SUB2 F SUB2) GREATER THAN CIO SUB4PRIME NEGATIVE GREATER THAN CL PRIME NEGATIVE. IN SLIGHTLY ALK. SOLNS. THE RESP. ORDER IS: F PRIME NEGATIVE GREATER THAN CL PRIME NEGATIVE, CIO SUB4 PRIME NEGATIVE GREATER THANSO SUB4 PRIME2 NEGATIVE, HCO SUB2 PRIME NEGATIVE, ACO.

UNCLASSIFIED

3/3 025 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111960

ABSTRACT/EXTRACT--THE DEPASSIVATION EFFECT OF ANIONS IN WEAK ALK. SOLNS. DECREASES (WITH THE EXCEPTION OF F PRIME NEGATIVE) WITH A DECREASE OF THEIR SURFACE ACTIVITY: F PRIME NEGATIVE GREATER THAN CL PRIME NEGATIVE GREATER THAN CLO PRIME NEGATIVE SUB4GREATER THAN SO SUB4 PRIME2 NEGATIVE GREATER THAN HCO SUB2 PRIME NEGATIVE. ACO PRIME NEGATIVE OBVIOUSLY ENHANCES THE DEHYDRATION OF THE HYDROXIDES ON THE FE SURFACE AND LEADS TO PASSIVATION. IN THE PRESENCE OF O THE INFLUENCE OF ACO PRIME NEGATIVE ON THE FORMATION OF A PROTECTIVE OXIDE LAYER ON THE FE SURFACE BECOMES MORE PRONOUNCED. UNDER CERTAIN CONDITIONS, O CAUSES A PRONOUNCED INCREASE OF THE DOUBLE LAYER CAPACITANCE OF FE. THE PHENOMENON IS ATTRIBUTED TO THE ACCUMULATION OF A STRONGLY POLAR INTERMEDIATE O REDN. PRODUCT ON THE METAL SURFACE, DUE TO THE RETARDING OF ONE OF THE O REDN. STAGES BY ANIONS.

UNCLASSIFIED

USSR UDC 669.017:548.5

PARKHUTIK, P. A., LUBENSKIY, M. Z.

"Influence of Composition and Cooling Conditions on Kinetics of Crystallization of Metal Alloys"

Izv. AN BSSR, Ser. Fiz-tekhn. Nauk, No 2, Minsk, 1971, pp 57-65.

Abstract: The crystallization of binary Al-Cu and Al-Si alloys was studied in a broad range of concentrations with five different cooling modes. The cooling curves are used to determine the time of primary and eutectic crystallization, and the dependence of cooling rate on composition is constructed. It is demonstrated that with identical cooling conditions, the kinetics of crystallization of the alloys changes with changing crystallization temperature interval. When the alloys solidified over a temperature range, the cooling curves show a clearly expressed liquidus plateau in the initial stage of crystallization, which is explained by the high rate of crystallization in the initial stages of the process with intensive heat liberation. The kinetics of crystallization of eutectic alloys depends on composition: with otherwise equivalent conditions, the cooling rate is greatest for pure metals, decreases with alloying and increasing crystallization range, passes through a minimum and then increases, reaching a maximum at the eutectic concentration.

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USSR

UDC 669.715.017.12.018.29:539.531+620.186

PARKHUTIK, P. A., and LUBENSKIY, N. Z., (Physico-Technical Institute, Academy of Sciences, BSSR)

"Effect of Composition and Conditions of Crystallization on the Structure and Hardness of Binary Aluminum-Copper and Aluminum-Silicon Alloys"

Izv. AN BSSR. Ser. fiz-tekhn. n. (Bulletin of the Academy of Sciences, Belorussian Soviet Socialist Republic, Series Physico-Technical Sciences), 1971. No 1, pp 38-45 (from Referativnyy Zhurnal -- Metallurgiya, No 6, Jun 71, Abstract No 61629)

Translation of Abstract: The HB and microstructure of binary alloys of Al-Cu and Al-Si alloys were studied over a wide range of concentrations (0-40% Cu and 0-20% Si) under casting and processing conditions, involving crystallization from five different systems of cold casting in metal and earthen forms. With increasing amounts of the second component, the rate of increase of hardness of the alloy differs in different parts of the composition diagrams. The difference in hardness of rapidly and slowly cooled melts increases with increasing amount of the second component. Homogenizing annealing levels the properties of the 2-phase alloys and strongly decreases its hardening. An explanation is given for the calculation of the analysis of the microstructure.

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USSR

PARKHUTIK, P. A., and LUBENSKIY, M. Z., Izv. AN BSSR. Ser. fiz-tekhn. n., 1971, No 1, pp 38-45 (from Referativnyy Zhurnal -- Metallurgiya, No 6, Jun 71, Abstract No 6I629)

(Seven illustrations; nine bibliographic entries)

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USSR

UDC 669.715.620.1

PARKHUTIK, P. A., SELEZNEV, L. P., LUBENSKIY, M. Z., and DUDETSKAYA, L. R.

"Effect of Zinc and Magnesium on the Mechanical Properties of AllOV Alloy"

Moscow, Tsvetnyye Metally, No 12. Dec 70, pp 52-55

Abstract: Impurities in the AllOV include zinc, with a maximum GOST-permissible content of 0.6%. Such a rigid limitation reduces the potential use of waste and scrap in producing secondary aluminum alloys, thus requiring an additional expenditure of primary aluminum or very costly vacuum equipment for dezincification, involving high power consumption. A basic component in the AllOV alloy is magnesium which, when combined with zinc, forms a number of chemical compounds. A magnesium content within 0.2-0.5% is readily controllable under production conditions. Earlier studies have shown that 0.15-0.35% Mg additions to AllOV alloy increase its strength and hardness and decrease plasticity. This study attempts to determine the combined effect of both zinc (0.0-3.0%) and magnesium (0.0-0.5%)

APPROVED FOR RELEASE: 09/19/2001 CIA-RDP86-00513R002201820016-9"

USSR

PARKHUTIK, P. A., et al., Tsvetnyye Metally, No 12, Dec 70, pp 52-55

on the mechanical properties and plasticity of AllOV alloy. The material was melted under flux consisting of equal amounts of NaCl and KCl. Zinc metal was introduced after melting at 730-740° C. The alloy was refined with $MnCl_2$ at 0.1% and was poured at 720-730° C. The experimental data show that extending the limit for zinc in AllOV alloy to 1.4% is fully permissible and that such additions have no adverse effects on the hardness, strength, and plasticity of the alloy.

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Aluminum and Its Alloys

USSR

UDC 669.017

PARKHUTIK, P. A., and LUBENSKIY, M. Z., Physico Technical Institute, Academy of Sciences Belorussian SSR

"Dependence of the Microhardness of Structural Constituents on the Composition and Rate of Solidification of Cast Aluminum Alloys"

Minsk, Akademiya Nauk BSSR, Izvestiya, Seriya Fiziko-Tekhnicheskikh Nauk, No 2, 1970, pp 33-38

Translation: A study was made of the microhardness of primary crystals and of the eutectic of binary Al-Cu and Al-Si cast and heat treated alloys in a wide range of concentration (0 - 40% Cu and 0 - 20% Si), produced under different conditions of crystallization (cast in metal and loam molds). It was confirmed that in the cast state the microhardness of crystals of α-solid solution of alloys of both systems continuously increases with the increase in content of the second component in the single-phase as well as in the double-phase region in the presence of the eutectic. The acceleration of the rate of quenching results in an increase of the microhardness of the solid solution. The obtained data attests to the intensification of the degree of intradendrite microheterogenization of the crystals of the solid

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USSR

PARKHUTIK, P. A., and LUBENSKIY, M. Z., et al., Akademiya Nauk BSSR, Izvestiya, Seriya Fiziko-Tekhnicheskikh Nauk, No 2, 1970, pp 33-38

solution by microinterlayers of the second phase, which were structured in the process of crystallization, whose density increases according to the degree of alloying and elevation of the intensity of quenching. With the approach of the structural equilibrium by cast alloys by prolonged diffusion annealing and hardening from the corresponding temperatures, the effect of heterogenization of the second order is weakened or disappears. The values of microhardness of the eutectic and hypereutectic primary separations -- phases $CuAl_2$ and Si -- are presented.

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USSR

UDC 669.017

PARKHUTIK, P. A., and LUBENSKIY, M. Z., Physicotechnical Institute, Academy of Sciences, BSSR

"The Influence of the Composition and of the Crystallization Conditions On the Structure and Hardness of Binary Aluminum-Copper and Aluminum-Silicon Alloys"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 1, 1971, pp 38-45

Abstract: The Brinell hardness and the microstructure of binary Al-Cu and Al-Si alloys in a high range of concentrations (0-40% Cu and 0-20% Si) was studied in a cast state, and in a heat-treated state, crystallized at five different cooling regimes by pouring into metal and earth molds. It is shown that as the content of the second component increases, the rate of hardness increase of the alloys is different at various sectors of the diagram of state. The rate of crystallization exerts a considerable influence on the strengthening and the structure of the alloys. The difference in the hardness of rapidly and slowly cooled alloys increases as the content of the second component is increased. Homogenizing annealing evens out the properties of

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USSR

PARKHUTIK, P. A., and LUBENSKIY, M. Z., Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh Nauk, No 1, 1971, pp 38-45

two-phased alloys and greatly decreases their hardening periods. The obtained rules governing changes of hardness in accordance with the composition and the rate of cooling are explained with account taken of analysis of the microstructures. Seven figures, 8 bibliographic entries.

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USSR

UDC 51

LUBERG, E. O. and ZDROK, A. G.

"Computing Systems by Linear Programming Methods"

Moscow, "Energiya," 1972, 80 pp, illustrated (from RZh--Matematika, No 10, 1972, Abstract No 10V602K)

Translation: Chap. 1, General approach. Chap. 2, Peculiarities of computing electronic circuits by linear programming methods. Chap. 3. Examples in the practical use of linear programming methods for designing electronic circuits.

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UDC: 51:621.391

USSR

LUBERG, E. O., ZDROK, A. G.

"Calculation of Circuits by Linear Programming Methods"

Moscow, Raschet skhem metodami lineynogo programmirovaniya (cf. English above), "Energiya", 1972, 80 pp, ill. 21 k. (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V602K)

Translation: Chapter I. General Propositions. Chapter II. Particulars of Calculating Electronic Circuits by Linear Programming Methods. Chapter III. Examples of Practical Use of Linear Programming Methods for Calculating Electronic Circuits.

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LUBEYEV, A. G.

UDC: 611.728.3:611.1].014.477-019

THE EFFECT OF HYPODYNAMIA AND HYPOKINESIA AND SUBSEQUENT HYPERGRAVITATION ON THE BLOOD VESSELS OF THE CAPSULE OF THE RABBIT'S KNEE JOINT

[Article by A.G. Lubeyev, Chair of Normal Anatomy (headed by Professor M.G. Prives, Honored Scientist), First Leningrad Medical Institute imeni Academician I.P. Pavlov; Leningrad, Arkhiv Anatomii, Gistologii i Embriologii, Russian, No 11, 1971, submitted 24 December 1970, pp 109-115]

More recently, scientists began to take a close look at the problem of the effect of man's physical activity on his health. In the space age, it is interesting to investigate man's resistance to gravitational stress following hypodynamia and hypokinesia.

Functional disturbances in the cardiovascular system are among the chief manifestations of prolonged hypodynamia and hypokinesia.

Thus far there have been few morphological investigations on this subject (V.A. Odinokova, 1953; V.S. Vakhtel', 1953; Albertazzi, 1955; O.V. Rodrigaylova, 1956; Palmisano, 1959; Renaud, 1959; L.A. Aleksina, 1968; I.G. Krasnykh, 1969). However, all authors report onset of reorganizations in the vascular system. As for morphological works dealing with the effect of hypergravitation on the vascular system of animals first maintained under hypodynamic and hypokinetic conditions, we found none in the literature. Elucidation of this matter is of both practical and theoretical interest.

These investigations have been started by the team of the chair of normal anatomy, First Leningrad Medical Institute, under the supervision of Professor M.G. Prives, Honored Scientist.

Our objective was to investigate the effect of varying durations of hypodynamia and hypokinesia (up to 7 months) on the intraorganic vessels of the knee joint capsule. In addition, we studied the effect of gravitational stress on the capsular vessels of animals maintained under hypodynamic and hypokinetic conditions for 2.5 and 5.5 months.

USSR UDC: 536.46.533.6

LUBI, Kh. and NURSTE, Kh.

"Experimental Investigation of the Aerodynamic Characteristics of Burning Air and Natural Gas Jets in the Transitional Flow Region"

Tallin, Izvestiya Akademii Nauk Estonskoy SSR, vol 21, No 2, 1972, pp 200-204

Abstract: The subject of this article is diffusion-kinetic burning gas jets in which the gas is a mixture of natural gas and air. In an earlier article by the first of the authors named above in the same journal (No 4, 1971) differences were found between the experimental and computed values for the length of the burning jet. The present paper gives details of further experiments performed to resolve these differences. Analysis of gas burners showed that the development modes of the burning jets lie in the transition flow region or near it, with the degree of preliminary gas mixing varied within broad limits. The experiments were done on a nozzle with a diameter of 21.5 mm, with an initial average gas flow of 15 m/s in velocity, and with the air portion of the mixture varying discretely from 0 to 100% in steps of 10%. Results of the experimentation are given. It was found that, by varying the preliminary air-gas mixture, the structure of the burning jet and its aerodynamics can be varied.

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1/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--SURFACE SOUND WAVES THEORY IN METALS IN A WEAK MAGNETIC FIELD -U-

AUTHOR-(04)-GRISHIN, A.M., KANER, E.A., LUBIMOV, O.T., MAKAROV, N.M.

COUNTRY OF INFO--USSR

SOURCE--SOLID STATE COMMUN. (USA), VOL. 8, NO. 8, P. 581-5 (15 APRIL 1970)

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--MAGNETIC FIELD, HIGH PURITY METAL, RAYLEIGH WAVE, SURFACE WAVE, SOUND WAVE, ELECTRON WAVEGUIDE, SPECTRUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1679 STEP NO--US/0000/70/008/008/0581/0585

CIRC ACCESSION NO--AP0122009

UNCLASSIFIED

2/2 038 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0122009

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS DEMONSTRATED THAT THE SURFACE ELECTRON WAVES SHOULD EXIST IN PURE METALS AND WEAK MAGNETIC FIELD NEAR THE FREQUENCIES OF THE ELECTRON TRANSITIONS BETWEEN MAGNETIC SURFACE LEVELS. SUCH WAVES ARE ABLE TO INTERACT STRONGLY WITH THE RAYLEIGH SOUND VIBRATIONS. SPECTRA DAMPING AND MUTUAL TRANSFORMATIONS OF THE ELECTRONIC AND RAYLEIGH WAVES ARE INVESTIGATED. FACILITY: KHAR'KOV STATE UNIV., USSR.

UNCLASSIFIED

UDC 681.327

USSR

DOLGOVESOV, B. S., KOVALEV, A. M., KOTOV, V. N., LUBKOV, A. A., NESTERIKHIN, YU. YE., OBERTYSHEV, K. F., TOKAREV, A. S., YAKIMOVICH, A. P., Novosibirsk

"Problems of Constructing Devices for Operative Interaction of Man with a Computer"

Novosibirsk, Avtometriya, No 2, 1972, pp 35-39

Abstract: Two types of devices corresponding to the basic requirements for systems for operative interaction of man with a computer -- a computer operating in the time sharing mode and peripheral devices numbering from 1 to 1,000 -- have been developed at the Institute of Automation and Electrometry of the Siberian Department of the USSR Academy of Sciences. One of these devices -- the Ekran -- was discussed previously [B. S. Dolgovesov, et al, Avtometriya, No 4, 1971; B. S. Dolgovesov, et al., Avtometriya, No 4, 1971; A. M. Kovalev, et al., Avtometriya, No 4, 1971]. The other -- the Simbol -- is investigated in the present article. A block diagram of the Simbol alphanumeric system is presented, and the algorithms for the various operating modes of the system are discussed. The algorithms of all modes of the system are executed by means of a microprogram control circuit. An effort was made to achieve the fastest possible system for which the principal cycle of the microprogrammed control unit was reduced to a minimum. Where possible the single pulse instructions

USSR

DOLGOVESOV, B. S., et al., Avtometriya, No 2, 1972, pp 35-39

are processed simultaneously; a very high cycle frequency is selected -- 2.5 millihertz. The operating logic of the device can be changed. One of the basic parameters of the operative interaction device along with broad functional possibilities is the information capacity. Thus, much attention was given to the high speed of individual units, in particular, the speed of the symbol genorator. The programmed segment method was used as the basis for constructing the symbol generator which provides 1,024 symbols with an image regeneration frequency of 50 hertz. An example image photograph from the Simbol screen is shown.

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UDC: 577.4

USSR

LUBKOV, N. V.

"Generating Functions and Calculation of the Reliability of Logic Circuits"

V sb. Avtomaty i upr. setyami svyazi (Automata and Control of Communications Networks--collection of works), Moscow, "Nauka", 1971, pp 167-171 (from RZh--Kibernetika, No 6, Jun 72, Abstract No 6V322)

[No abstract]

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USSR UDC 539.4

LEVIN, YE.YE., KAZENINA, A.D., KUDATOV, P.S., GUREVICH, G.I., GENERSON, I.G., LURMAN, P.N., Central Scientific Research, Planning, and Design Boiler and Turbine Institute imeni I.I. Polzunov

"Some Results of Acceleration Tests of Disk Models Made of Steel EP 631"

Kiev, Problemy Prochnosti, No 2, 1972, pp 113-116

Abstract: The experience of preparing and testing disks with a diameter of 355 x 46 mm, made of ingots weighing 0.8 t, is set forth for the first time. Steel EP631 was melted in a 5-ton electric arc furnace with subsequent vacuum-arc remelting. The heat-treatment regime of the disks is presented, as well as their mechanical properties in various directions. The results of acceleration tests of two models of the disks of one of the turbo machines are presented. Tests were carried out on disks without incisions, as well as on disks with "effective" incisions on the internal diameter, 10 mm deep and with a curvature radius of 0.16 mm. The obtained results testified to the actual possibilities of preparing and using disks of the indicated size from steel EP631. 3 figures, 3 tables, 9 bibliographic entries.

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1/2 021 UNCLASSIFIED PROCESSING DATE--090CT70

TITLE--ELECTRONIC INFLUENCE OF RUTHENOCENYL AS SUBSTITUENT -U-

AUTHOR-(02)-GUBIN, S.P., LUBOVICH, A.A.

COUNTRY OF INFO--USSR

SOURCE--J. ORGANOMETAL. CHEM. 1970, 22(1), 183-94

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FERROCENE, RUTHENIUM COMPOUND, METHANE, CARBOXYLIC ACID, ELECTRON DENSITY, CARBONYL RADICAL, ELECTRON POLARIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1990 STEP NO--NE/0000/70/022/001/0183/0194

CIRC ACCESSION NO--AP0112954

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--090CT70

2/2 021

CIRC ACCESSION NO--AP0112954

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FERROCENYLRUTHENOCENYLMETHANE WAS PREPD. IN ORDER TO EST. QUANT. THE ELECTRONIC INFLUENCE OF RUTHENOCENYL AS SUBSTITUENT. THE FORMAL REDOX POTENTIAL OF THE FERROCENYL NUCLEUS IN THIS COMPD. WAS DETD.; THE PK SUBA OF RUTHENOCENYLCARBOXYLIC ACID WAS MEASURED IN 50PERCENT ETOH AND THE CO STRETCHING FREQUENCY AND BASICITY OF ACETYLRUTHENOCENE WERE ALSO FOUND. THE VALUES OBTAINED WERE USED IN THE CALCN. OF THE SIGMA SUBI, SIGMA SUBP, AND SIGMA SUBP POSITIVE CONST., OF RUTHENOCENYL AS A SUBSTITUENT. CHANGES IN THE REACTIVITIES OF THE 5 MEMBERED AROMATIC RINGS ARE ASSOCD. WITH THE CHANGE IN EFFECTIVE CHARGE ON THE RING C ORBITALS. WHEN PASSING FROM FERROCENE TO RUTHENOCENE, WHEREAS THE PI ELECTRON D. AT THE RINGS AND ITS POLARIZABILITY REMAINED UNALTERED. FACILITY: INST. OF ORGANO-ELEM. COMP., MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 612.46-06:612.176

GLEZER, G. A., LUBUZH, K. D., and LEDYASHOVA, G. A., Institute of Cardiology imeni A. L. Myasnikov, Academy of Medical Sciences USSR, and All-Union Scientific Research Institute of Physical Culture

"Study of the Main Hemodynamic Indexes and Kidney Function in Healthy Persons After Physical Exercise"

Moscow, Kardiologiya, No 5, 1971, pp 114-120

Abstract: The volume of circulating blood, heart rate, renal circulation, and so forth were studied in two groups of healthy males - 18 to 39 and 40 to 60 years of age - after exercise of different degrees of strenuousness (150, 400, 750 kgm/min) on a bicycle ergometer for 30 minutes. Exercise slightly decreased the amount of circulating blood at the expense of plasma, resulting in an elevated hematocrit. It increased the systolic pressure but had virtually no effect on the diastolic. The heart rate and cardiac index increased in direct proportion to the strenuousness of the exercise. Heavy exercise increased the cardiac output more in those over 40. General peripheral resistance decreased more rapidly after slight exertion and it continued to decrease after greater exertion but at a slower rate. Heavy exercise slowed the renal

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GLEZER, G. A., et al, Kardiologiya, No 5, 1971, pp 114-120

blood flow, especially in those over 40. Glomerular filtration tended to decrease only after heavy exercise. Minute diuresis decreased with increasing exertion chiefly because of increased tubular reabsorption.

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USSR UDC 621.371:538.569.4:551.57

DRYAGIN, Yu. A., LUBYAKO, L. V., and KUKIN, L. M.

"Signal Attenuation by Fog and Snowfalls (λ = 1.3 mm)"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 86-88 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A316)

Translation: The technique of measuring the attenuation using transceiver equipment with two paraboloid of revolution antennas located 1.6 km. from the transmitting-receiving point of a corner reflector is described. Bibliography of four. N. S.

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USSR

UDC: 539.2

LUBYAKO, L. V.

"Investigating the Electrical and Magnetic Characteristics of Materials in the Millimeter and Submillimeter Wavelength Ranges"

Gor'kiy, Izvestiya VUZ--Radiofizika, Vol 14, No 1, 1971, pp 133-137

Abstract: The Michelson interferometer can be used to investigate the characteristics of homogeneous media by a process known as the method with the asymmetrical Fourier transform. This method has been proposed for investigating the optical characteristics of materials in the infrared range. This article describes the application of the method, in the 1-2 millimeter wavelength range, to determine the parameters of dielectrics and diamagnetic materials. A block diagram of the measuring equipment is shown, and the method of measurement detailed. Parameters of various materials, including quartz, teflon, polystyrene, etc., as found by this method, are given in one table. In a second, similar characteristics for various types of ferrite, measured at wavelengths of 0.9 mm, are presented. The author expresses his gratitude to I. L. Bershteyn, K. A. Goronina, and L. I. Fedoseyev for their discussion of the work.

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USSR

UDC 661.143.004.14

SOKOLOV, V. A., STYROV, V. V., NASLEDNIKOV, YU. M., KHORUZHIY, V. D., LUBYANSKIY, G. A., and URUSOV, B. G.

"On the Feasibility of Employing Radical Recombination Luminescence in the Physicochemical Control of Phosphor Crystals"

Sb. nauch. tr. VNII lyuminoforov i osobo chist. veshchestv (Collection of Scientific Works of All-Union Scientific Research Institute for Phosphors and Ultrapure Substances), 1971, vyp. 6, pp 89-94 (English summary) (from RZh-Khimiya, No 16, 25 Aug 72, Abstract No 16L135 from summary)

Translation: The article suggests a new method of physicochemical control of the synthesis conditions and the quality of phosphor crystals, based on the use of the phenomenon of radical recombination luminescence (RRL). RRL with high sensitivity detects small concentrations of impurities in a phosphor, polymorphic transformations, decay of solid solutions, etc. Some examples are examined.

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USSR UDC: 621.317.335

KAMUZ, V. K., LUBYANYY, V. Z.

"A Method of Determining the Figure of Merit of a Varicap"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 28, 1970, Soviet Patent No 280647, Class 21, filed 26 Nov 68, p 67

Abstract: This Author's Certificate introduces a method of determining the figure of merit of varicaps by connecting them in a self-oscillating tank which operates under mild self-excitation conditions. As a distinguishing feature of the patent, measurement precision is improved by changing one of the parameters of the self oscillator, such as steepness, to maintain a constant voltage across the varicap, and determining the figure of merit from the change in this parameter.

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USSR

UDC 517.946

IVANOV, V. T., SMIRNOV, G. P., and LUBYSHEV, F. V., Bashkir State University

"Ordinary and Inverse Boundary Value Problems for Heat Conductivity Equations"

Minsk, Differentsial'nyye Uravneniya, No 11, 1972, pp 2023-2028

Abstract: This paper considers an approximate-analytic method, the method of planes, for solving inverse boundary value problems. Using as an example the solution of the inverse boundary value problem for the simplest heat conductivity equation, the authors apply the differential-difference method. The method of planes is explored in an earlier paper published in the journal noted above (O. A. Liskovets, No 12, Vol 1, 1965). As for the heat conductivity equation considered in the present paper, it is

$$\frac{\partial u}{\partial t} = a^2\left(\frac{\partial^2 u}{\partial x^2} + \frac{\partial^2 u}{\partial y^2}\right) + q(t,x,y),$$

in the region of $|x| < \infty$, $c < y < d$, and $t > 0$, under the following initial boundary and conditions: $u(x,y,0) = \varphi(x,y)$, $u(x,c,t) = 0$, $u(x,d,t) = 0$. It is also assumed that the function q has the form $q(t,x,y) = f(y,t)\delta(x - x_0)$, where $\delta(x)$ is the Dirac delta function.

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1/3 009 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--EMULSION LACQUER NTS 542 -U-

AUTHOR-(03)-LUCHANSKIY, L.N., ZURABAN, K.M., FELDMAN, I.S.

COUNTRY OF INFO--USSR

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CIRC ACCESSION NO--AP0119477

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. LACQUER NTS 542, USEFUL FOR COATING LEATHER, IS THE PRODUCT OF EMULSIFICATION OF A SOLN. OF PLASTICIZED COLLOXYLIN IN WATER. CAREGUL TESTING OF MATERIALS, ADDNL. PURIFICATION OF ALIZARIN OIL, AND USE OF DEMINERALIZED WATER ENSURE THE STABILITY OF THE EMULSION FOR 4-6 MONTHS. THE DUMULSION MUST BE STORED AT 5-25DEGREES. REFRIGERATION ALTERS THE SOLY. OF THE EMULSIFIER IN THE DIFFERENT PHASES AND LEADS TO COALESCENCE OF THE EUMULSION ON THAWING. INCREASE IN TEMP. LEADS TO AN INCREASE IN PARTICLE COLLISIONS WHICH DESTROY THE EMULSION. THE PRESENCE OF AN ELECTROLYTE DECREASES THE POTENTIAL OF THE ELEC. DOUBLE LAYER SURROUNDING THE PARTICLES AND DESTROYS THE EMULSION. THE EMULSION FORMED USING WATER WITH A HARDNESS OF 7-9 MG EQUIVS.-1. IS ONLY USABLE FOR 24-48 HR. DILG. THE EMULSION FOR USE MAY UPSET THE BALANCE BETWEEN WATER AND SOLVENT IN THE EMULSION. THE FILM THUS OBTAINED RETAINS WATER, WHICH CAUSES LOSS OF WHITENESS. THIS IS AVOIDED BY ADDING 10 WT. PARTS SOLVENT (CYCLOHEXANONE OR BUOAC) TO 100 WT. PARTS LACQUER, HOMOGENZING THE MIST., AND DILG. WITH 10-11 WT. PARTS DEMINERALIZED OR DISTD. WATER. AN EMULSION OF VISCOSITY 15-18 SEC (AT 20DEGREES IN A VZ-3 FUNNEL), WHICH IS SUITABLE FOR APPLICATION BY A PAINT SPRAY, IS OBTAINED. THE LACQUER IS APPLIED TO LEATHER PRECOATED WITH A COLORING COATING BASED ON A SYNTHETIC FILM FORMING MATERIAL AND AN ALBUMIN BINDER. APPLICATION IS BY PAINT SPRAYING FROM A DISTANCE OF 30-40 CM, WITH AN AIR PRESSURE OF 3 ATM. FOR A JET DIAM. OF 1.1-1.3 MM AND 4.5-6.0 ATM. FOR A DIAM. OF 1.8 MM. THE COATING IS DRIED AT 35-40DEGREES.

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